

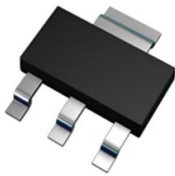
Features

- $BV_{CEO} > -400V$
- $I_C = -200mA$ High Continuous Current
- Excellent h_{FE} Characteristics up to $-100mA$
- Low Saturation Voltage $V_{CE(sat)} < -200mV @ -20mA$
- Complementary NPN Type: FZT458
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

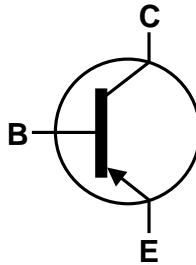
Mechanical Data

- Package: SOT223
- Package Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads. Solderable per MIL-STD-202, Method 208 Ⓔ③
- Weight: 0.112 grams (Approximate)

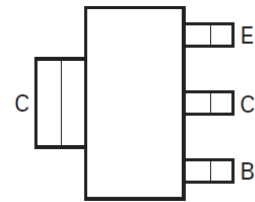
SOT223 (Type DN)



Top View



Device Symbol



Top View
Pin-Out

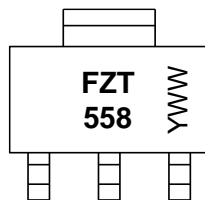
Ordering Information (Note 4)

Part Number	Compliance	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
						Qty.	Carrier
FZT558TA	Standard	SOT223 (Type DN)	FZT558	7	12	1,000	Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

SOT223 (Type DN)



FZT558 = Product Type Marking Code
 YWW = Date Code Marking
 Y or \bar{Y} = Last Digit of Year (ex: 2 = 2022)
 WW or $\bar{W}W$ = Week Code (01 to 53)

Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-400	V
Collector-Emitter Voltage	V _{CEO}	-400	V
Emitter-Base Voltage	V _{EBO}	-7	V
Continuous Collector Current	I _C	-200	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

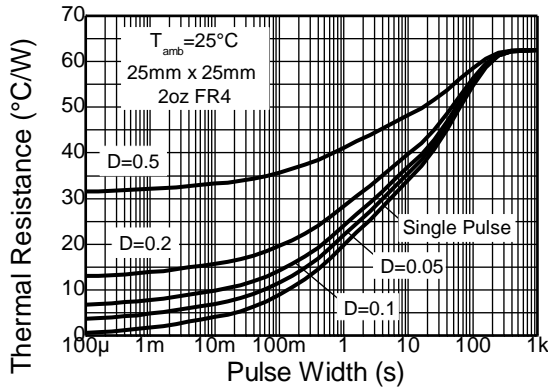
Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	(Note 5) 2	W
		(Note 6) 3	W
Thermal Resistance, Junction to Ambient	R _{θJA}	(Note 5) 62.5	°C/W
		(Note 6) 41.7	°C/W
Thermal Resistance, Junction to Leads (Note 7)	R _{θJL}	19.41	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

ESD Ratings (Note 8)

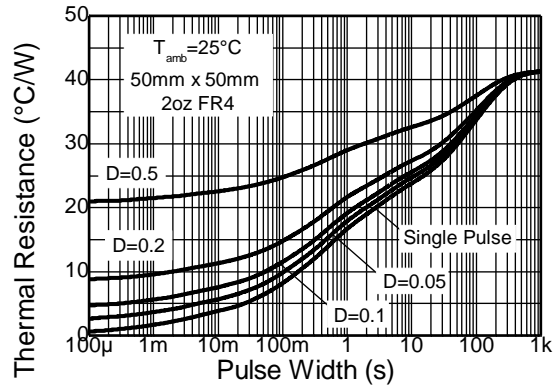
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

- Notes:
5. For a device mounted with the collector lead on 25mm x 25mm 2oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 6. Same as note (5), except the device is mounted on 50mm x 50mm single sided 2oz weight copper.
 7. Thermal resistance from junction to solder-point (at the end of the collector lead).
 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

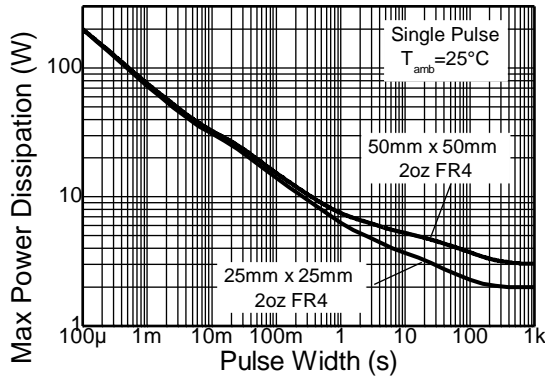
Thermal Characteristics and Derating Information



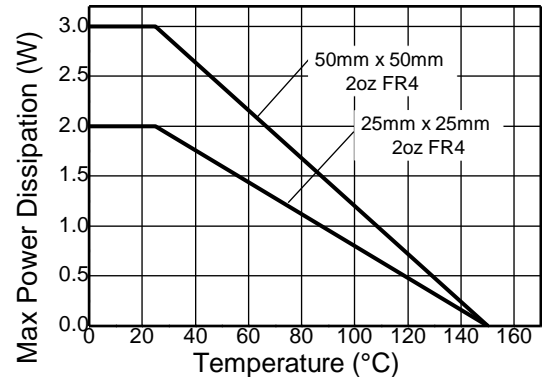
Transient Thermal Impedance



Transient Thermal Impedance



Pulse Power Dissipation



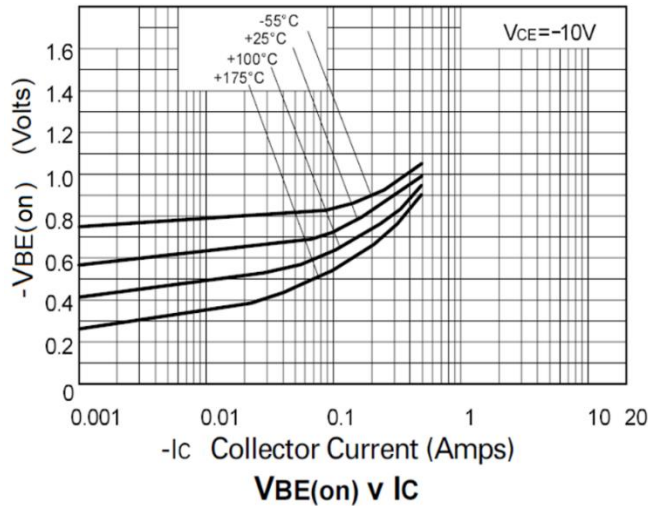
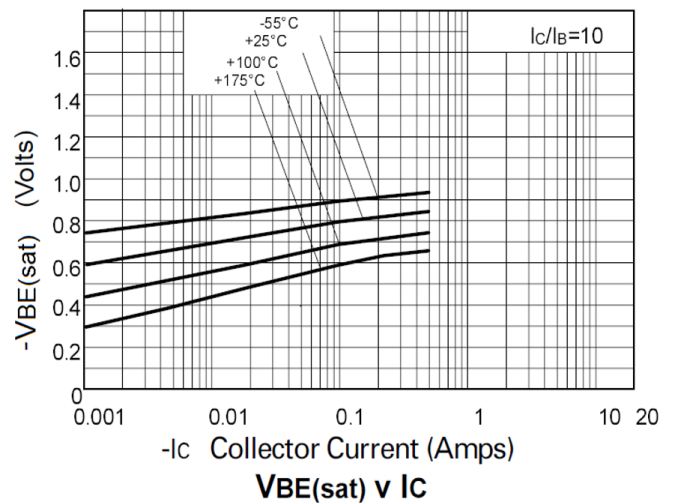
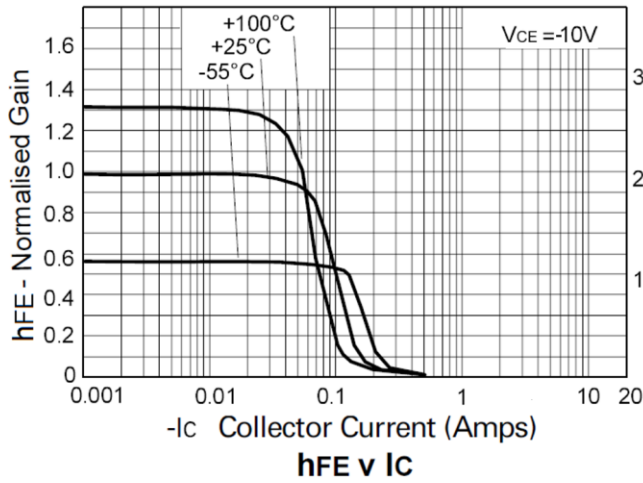
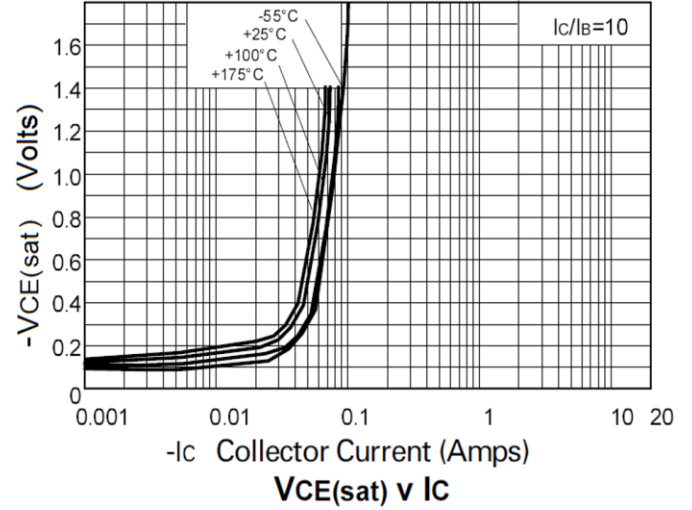
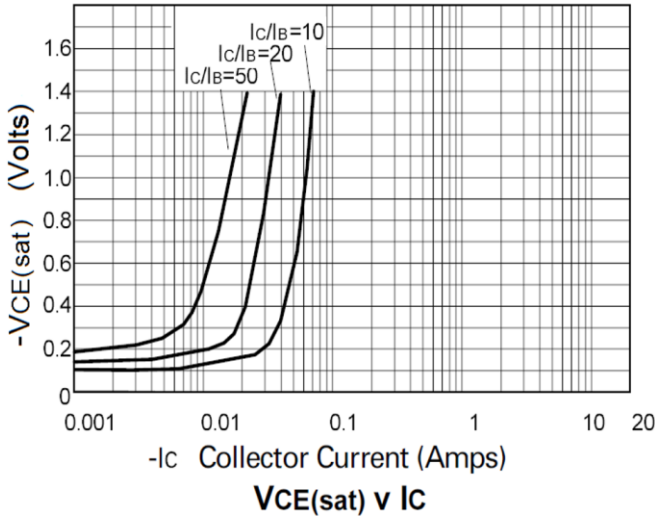
Derating Curve

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-400	—	—	V	I _C = -100μA
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	-400	—	—	V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-7	—	—	V	I _E = -100μA
Collector Cut-Off Current	I _{CBO}	—	—	-100	nA	V _{CB} = -320V
Collector Cut-Off Current	I _{CES}	—	—	-100	nA	V _{CE} = -320V
Emitter Cut-Off Current	I _{EBO}	—	—	-100	nA	V _{EB} = -5V
Collector-Emitter Saturation Voltage (Note 9)	V _{CE(sat)}	—	—	-0.2 -0.5	V	I _C = -20mA, I _B = -2mA I _C = -50mA, I _B = -6mA
Base-Emitter Saturation Voltage (Note 9)	V _{BE(sat)}	—	—	-0.9	V	I _C = -50mA, I _B = -5mA
Base-Emitter Turn-On Voltage (Note 9)	V _{BE(on)}	—	—	-0.9	V	I _C = -50mA, V _{CE} = -10V
DC Current Transfer Static Ratio (Note 9)	h _{FE}	100 100 15	— — —	— 300 —	—	I _C = -1mA, V _{CE} = -10V I _C = -50mA, V _{CE} = -10V I _C = -100mA, V _{CE} = -10V
Transitional Frequency (Note 9)	f _T	50	—	—	MHz	V _{CE} = -20V, I _C = -10mA f = 20MHz
Output Capacitance (Note 9)	C _{obo}	—	—	5	pF	V _{CB} = -20V, f = 1MHz
Switching Time	t _{on}	—	95	—	ns	I _C = -50mA, V _C = -100V I _{B1} = 5mA, I _{B2} = -10mA
	t _{off}		1,600			

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

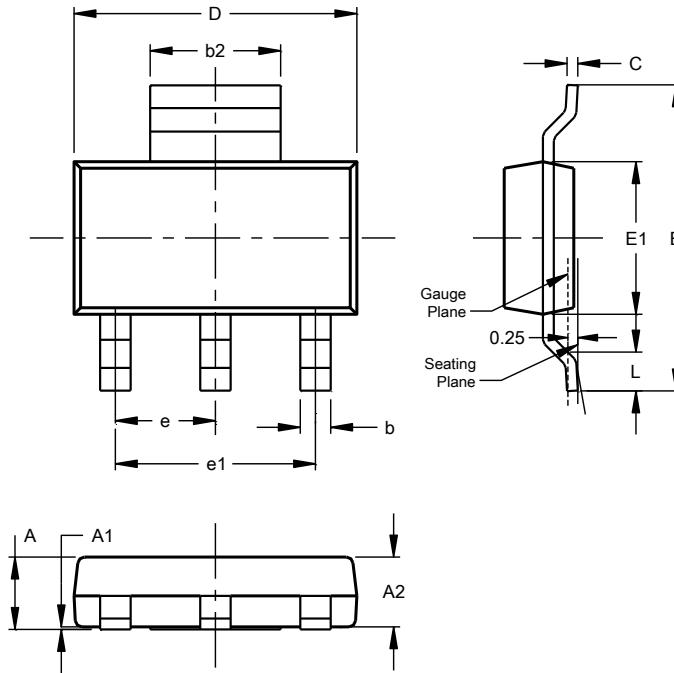
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT223 (Type DN)

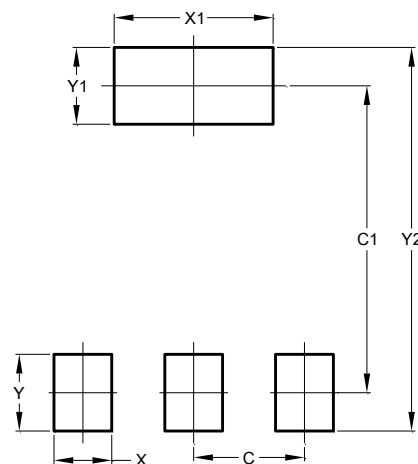


SOT223 (Type DN)			
Dim	Min	Max	Typ
A	--	1.70	--
A1	0.01	0.15	--
A2	1.50	1.68	1.60
b	0.60	0.80	0.70
b2	2.90	3.10	--
c	0.20	0.32	--
D	6.30	6.70	--
E	6.70	7.30	--
E1	3.30	3.70	--
e	--	--	2.30
e1	--	--	4.60
L	0.85	--	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT223 (Type DN)



Dimensions	Value (in mm)
C	2.30
C1	6.40
X	1.20
X1	3.30
Y	1.60
Y1	1.60
Y2	8.00

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